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AUTHOR Ransom, Peggy E.; Swearingen, Rebecca
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ABSTRACT

A study investigated whether students had used a microcomputer prior to taking a computer literacy class, which computer languages they knew and used, whether they thought the computer literacy course should be required, and whether they thought the class would help them to secure a teaching position. Undergraduate students at Ball State (Indiana) and Kansas State Universities completed a survey following the course. Results indicated that students saw the need for knowledge of computers in order to be successful teachers. The course which they perceived as being most beneficial was one which included hands-on materials and dealt with classroom uses of the microcomputer. Results also indicated that instructors of the computer course should be cognizant of the fact that students who take the course have had some exposure to computers. Instructors should take the time to determine what types of experiences the students have had when designing the course. Furthermore, various types of application software, including word-processing, database, and spreadsheet, need to be examined and used during the course. (PRA)

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AMERICAN READING FORUM

SARASOTA, FLORIDA

Literacy: The aspect of computers at the university level

Friday, December 14, 1990

Coquina Room: 9:00 a.m. - 9:25 a.m.

DR. PEGGY E. RANSOM

Ball State University

DR. REBECCA SWEARINGEN

Kansas State University

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Literacy: The aspect of computers at the university level.

There are several classes, in the area of computer literacy, offered to Ball State University Elementary Education students. These classes are highly recommended for students at this time (fall and spring of 1990 91), but not required; however the University is planning to make this two hour semester computer literacy class mandatory during the fall of 1991.

The Ball State faculty has been discussing the pros and cons of this course and its content, especially whether to include word processing, data base, spreadsheet, and programming in the content, as well as time for evaluations of software. At the present time all of the above content is being taught, which is a great deal of information for a two hour course; however only a year ago, the course was nothing but programming and evaluating software.

The authors, Becky Swearingen and Peggy E. Ransom decided to investigate the students, through a survey, for their opinion on the course. We wanted to answer such questions as:

1. How much did students use the microcomputer before the class?
2. What computer languages did they know and use (like BASIC and LOGO or others)?
3. Did they think the course should be required?
4. Would the class help them secure a teaching position?

A survey was then devised by the researchers. They had the Ball State University Computer Center assist them in editing the material in order to be able to analyze the data statistically when comparing the results of the microcomputer classes.

Then one of the authors (in the fall of 1990) decided to leave Ball State University and accept a teaching position at Kansas State University. After she arrived at Kansas State University, she contacted the computer course teacher there and arranged for the same survey to be conducted at that school.

With one investigator in a different school, the objective of the

research changed. The results now would compare the computer classes at Ball State University with the computer classes at Kansas State University concerning the questions posed about computer classes.

The population used in this study was as follows:

<u>Students at Ball State University</u>	<u>Students at Kansas State University</u>
Soph. 1	Soph 0
Jr. 20	Jr. 15
Senior 33	Senior 50
Missing 2	Missing 1
Total 56	Total 66

The following results are a comparison of the data with the students at Ball State University in an elementary computer class and those at Kansas State University enrolled in a computer class.

The statistical analysis used several formulas applying the collected data which included: The Pearson Product Moment Correlation, Mantel-Haensel Test for linear association, Test for Linear Association, Continuity Correction and the Fisher's Exact Test: One Tail and Two Tail. The .05 level of significance was used for the Pearson Product Moment. When they are statistically significant they have an asterisk (*).

Correlation for the reported analysis that follows. The survey for the study consisted of the following thirteen questions and sub-questions.

1. Have you taken an Elementary Computer Course?

.00*

Comments:

Ball State University

None

Kansas State University

Instructional Media

Introduction to Computers

Personal Computer

High School

The responses from question number one (1) were surprising to the investigators because they showed a higher percentage of students at Kansas State University to have taken computer courses. Many of these students had taken the course through the College of Arts and Sciences. Of those students who had taken the course at Kansas State, most had taken the instructional media course. This is a survey course in media, therefore, was not primarily concerned with computer literacy. The course at Ball State University was for elementary education students and was a computer course.

2. *Were you satisfied with it?*

.43 (65 from BSU missing)

Comments:

Ball State University

None

Kansas State University

Not satisfied with K-State
programming class

Started at a beginning and
we already knew a lot

Too rushed

Too complicated

Use it all the time now

What a joke!

Not good teaching

Media course needs reworking

What part did you find most beneficial?

Computer Works

Hands-on-work

Day on MacIntosh

Activities for classroom

Word Processing/Database

Appleworks tutorial disk

Learning different types of
programs

Basic Functions (Commands)

Hands-on

Word Perfect usage

Program Writing

Charts

Wordstar

A Hired Tutor

What part did you find least beneficial?

Note Taking

Appleworks

Guides to Assignments

Lecture

Reading book

Database

Programming

Lotus

Terminology

Too short time

Mediagraphy

Sign making

Learning Binary Code

What would you add to the course?

More hands-on-work

Better instruction

More time

Use in classroom

Programming

More languages

Less lectures

Self-paced course

More word processing and
database

While question two at first glance seems to reveal dissatisfaction with the Kansas State course, the students commented that they found many of the aspects of the course beneficial. The Ball State students made very few comments about their satisfaction or dissatisfaction with their computer course, because very few of them had actually completed or even started a computer course at Ball State University. Students at

both schools, in general, feel that the course should include more hands-on experiences and more time spent on how to actually utilize the computer in the elementary classroom.

3. *Have you had any other computer instruction?*

.22

Comments:

Ball State University

On the job training

High School

Industrial Arts Class

EDEL 360 (Software)

Univ. of Evansville

Word Perfect

P.C. Write

Math 201

Typing for class and save it

Word Processing

Kansas State University

On the job training

High School

Media

BASIC, etc

Intro. Computer Engineering

Programming

Private Instruction

Into. to Computers

Degree in Programming

Home Computer

Many of the students had other computer instruction as revealed by question three. This included on the job training, private instruction,

home computers, and high school classes.

4. *Will these computer courses assist in teaching?*

.53

Comments:

Ball State University

Yes 35 No 8

Kansas State University

Yes 45 No 14

If you had more than one course, which one was most valuable?

No comparison

Instructional Media

Need wealthy school, so need this?

Intro. to Personal Computer

Want to learn more

Printshop

Word Processing

Database

Evaluating Software

On the job training

Word Star

More advanced

More BASIC

When asked if they felt the computer course would help them in their teaching, students in both schools agreed that it would. They cited their experiences on specific software packages as being valuable tools for teaching. Some of the software packages cited were: Print Shop.

AppleWorks, Word Perfect, and Wordstar. Word processing, in general, was seen as a valuable tool in the classroom.

5. *If you had not had a course, have you had some experience with microcomputers?*

.26

Comments:

Ball State University

IBM

Apple

MacIntosh

Vax

Commodore

Radio Shack

Kansas State University

IBM

Apple

MacIntosh

Zenith

Compac

Radio Shack

Appleworks

Computer Aided Drafting
Design

What kind of experiences have you had?

Paper, Reports, etc.

LOGO

Papers

On the job

Word Processing

Information Retrieval

Programming

Programming

Database

Database

Games

Games

Evaluate Software

Lotus

Graphics

Graphics

High School

Statistical Programs

Geology Application

Have you had experience with mainframe computers?

Yes 18 No 1

Yes 64 No 22

Students have had experiences with a wide variety of microcomputers. They have used these microcomputers to perform word processing, database and spreadsheet activities. Many of the students used the microcomputers to play games, which may help lead to some comfort level with the microcomputer.

6. *Is a course a valid requirement for the degree of Elementary Education?*

Yes 53 No 1

Yes 64 No 2

Comments:

Ball State University

An option not requirement

Teacher knowledgeable

Teaching Tool (Application)

Teacher Training

Computer Literacy

Kansas State University

Program writing pointless

Computer World

Tool/Application

Teacher Training

Course for Elem. Students

The majority of the students in both universities felt that a course in microcomputers is a valid requirement for a degree in elementary education. As one student put it "I feel that everyone needs to take some sort of computer introduction course, because in the future, an individual will not be able to live without using one." It was felt that program writing should not be included as part of the course. Rather, the microcomputer as a teaching tool through application programs such as word processing, database, and spreadsheet should be stressed.

7. Which of the following computer applications do you use now?

Do you use Data Base?

.02* (104 BSU missing)

Do you use Spreadsheet?

K.S.U. used it for 71.2% and B.S.U. for 28.9%

Do you use Word Processing?

.01* (94 BSU missing)

Do you use Graphics?

.01*

Surprisingly enough, many of the students used the microcomputer for data base and spreadsheet activities. Word processing is the most widely used application of the microcomputer. Many of the students said they used the microcomputer for graphics activities. This may include graphics programs such as Print Shop and PrintMaster, rather than the creation of graphics by the students, although some students did create graphics.

10. *Do you use the microcomputer to complete work in your courses?*

.02*

Comments:

Typing

Micro Computer

Papers	Papers
Word Processing	Word Processing
Quizzes	Spreadsheets
Graphics	Graphics
Observation Reports	Database
Industrial Arts	

Students used the microcomputer to complete their course work at both universities. It was used primarily for typing of material for completion of course requirements. However, some students said they completed quizzes on the microcomputer. Graphics was also mentioned but this might reflect use of graphic programs.

11. *Do you believe having microcomputer experience will assist you in securing a teaching position?*

.05*

12. *Have you had any programming experiences?*

.14 (70 BSU missing)

The majority at both schools believed that knowing and using the microcomputers would aid them in securing a teaching position. Students at Kansas State University had experiences with computers, whereby the

Ball State University students did not have any experiences, which would be the reason for the missing BSU reports.

13. *Have you had any classes other than elementary education classes that used computer assisted instruction?*

.18

If Yes, was this a worthwhile experience?

Yes 16 No 36

Yes 13 No 52

If Yes, why?

Lessons that fit; builds security

Computer Philosophy-open

Testing instruction

Algorithms process

Helpful ed. tools

Statistics application

Taught me math

Helped me with knowledge

Reviewed questions on exams

Programmming

I need this in elementary schools

Because I haven't forgotten it

If no, why?

Not enough time on computers

Not enough time

More hands on work

So expensive

Won't use it again

The accounting class

Testing-multiple choice not for
computers

computers made it
harder

Very few of the students reported the use of computer assisted instruction in university classes other than their elementary classes. For the most part students reported these experiences as being not very worthwhile because there was not enough time spent on the computers or because it made the course more difficult.

Summary:

This type of statistical survey would have been better if the two classes had been more similar in content, and were both elementary education students only. Differences occurred when the course at Kansas State University was for two weeks and the one at Ball State University was 16 weeks. Another difference was that the survey was done at the start of the Ball State University class, while the the Kansas State University students had most of the course completed when they did the survey. These items easily account for some of the statistical differences in the data.

The students at KSU would like to see some changes in the Instructional Media course, but they also felt they had gained knowledge from it. The BSU students didn't have a chance to evaluate the course, since the survey was given to them at the beginning of the semester. This does indicate that another survey should be given at the beginning and the end of the course at Ball State University and Kansas State University for comparison results at each university.

The results of the survey indicate that students see the need for knowledge of computer to be successful teachers. The course which they perceive as being most beneficial is one which includes hands-on materials and also deals with classroom uses of the microcomputer. As one student remarked, "If you have a class, then please also teach how to incorporate it in the classroom (games, lessons)." The course should not deal with programming or should have a minimum of time spent on programming courses.

The instructors of the computer course should be cognizant of the fact that students who take the course have had some exposure to computers and should take the time to determine what types of experiences the students have had and design the course accordingly. This

may require a certain amount of individualization, maybe a module approach, which is the instruction in which students would be able to begin at their current level of knowledge and move at their own pace through the material.

Various types of application software need to be examined and used during the course of a computer literacy. This software should include word-processing, database, and spreadsheet. The students also should be introduced to graphics programs such as Print Shop. If possible familiarity with both the Apple and the IBM should be developed. Time may also be spent exploring avenues for funding for computers and software. There is a certain amount of confusion in students minds' about the types of schools which have computers, i.e. the most affluent schools have computers and the less affluent do not. It would be beneficial to make students aware that grants are available to help less affluent schools purchase hardware and software.

The survey did give the authors valuable information for use in reporting to the faculty about the content for future microcomputer courses for elementary education students. It will be most helpful in designing future elementary education microcomputer courses.